



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,766	11/15/2001	Dan A. Steinberg	23091/27-ACT-163(A1148.00	7462
26086	7590	10/06/2003		
HALEOS, INC. 3150 STATE STREET BLACKSBURG, VA 24060			EXAMINER VALENCIA, DANIEL E	
			ART UNIT 2874	PAPER NUMBER

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/987,766

Applicant(s)

STEINBERG ET AL.

Examiner

Daniel E Valencia

DV

Art Unit

2874

-- Th MAILING DATE of this communication app ars on th cover sheet with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed August 7, 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Applicant's communication filed August 7, 2003 has been carefully studied by the Examiner. In accordance with the communication, claims 1, 3, 4, 7, 21, 22, 24, and 30 have been amended, and new claims 40-43 have been acknowledged. In view of newly discovered prior art, Examiner withdraws previous prior art rejections. This action is NOT made final.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 42 and 43 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The word "monolithic" in new claims 42 and 43 does not appear anywhere in the specification; therefore, the claims lack support.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2874

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6, 7, 9-13, 18-23, 35-39, and 41 rejected under 35 U.S.C. 102(b) as being anticipated by Tamura Japanese Patent No. JP 11305151 A (newly cited). Refer to the appropriate drawings or parts of the English Abstract. Tamura discloses an optical switch connection part with all the limitations of the abovementioned claims.

Regarding claim 1, 6, and 41, Tamura discloses an optical assembly (drawings 1-4), comprising: a substrate (3) comprising an upper surface and a cut-out portion (3c); an optical array (1) mounted on said upper surface; and an imaging assembly (11 or 9) positioned at least partially within said cut-out portion, said imaging assembly comprising at least one imaging device (lenses) mounted on a first chip; wherein said optical array is optically coupled to said imaging assembly, and wherein the optical array comprises an optical bench. Tamura's disclosure further shows that the optical array is affixed to the imaging assembly (7 or 11) and the imaging assembly is fixed to the substrate, as described by claim 2. With reference to claim 3, Tamura's disclosure shows that the device further comprises a waveguide mounted on the substrate, said waveguide (2, 13, or 18) being optically coupled with said imaging assembly and comprising at least one waveguide core encased within said cladding. Tamura's disclosure shows that the optical array comprises an optical fiber array comprising a second chip (4) and at least one optical fiber mounted to said second chip, as explained in claim 7. As to claim 9, Tamura shows that the second optical chip includes at least

Art Unit: 2874

one V-groove (abstract), said optical fiber being mounted in said V-groove of said second chip. Tamura shows a notch (3c) that is transverse to said V-groove, as mentioned in claim 10. Regarding claim 11, Tamura discloses that the optical fiber array comprises a lid chip (4). Tamura shows that the first chip comprises a V-groove (6a) and the imaging device (7) is mounted in the V-groove of the first chip (6), wherein the imaging device is a lens, as described in claims 12 and 13. Referring to claims 18 and 19, Tamura shows that the cut-out portion is a valley, wherein a recess is between at least one pair of ledges. Tamura further discloses a notch on a side of the ledges serving as a wick stop (drawing 3d), as mentioned in claim 20.

With reference to method claims 35-39, the steps described in the claim would be inherent in the structure of the device disclosed by Tamura.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 14-17, and 40, are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura. Refer to the appropriate drawings or parts of the specification. Tamura as applied above, discloses an optical assembly with essentially all the limitations of the claimed invention. However, the reference does not explicitly specify as the types of lenses used.

Art Unit: 2874

On the other hand, these limitations would have been obvious in view of the general body of knowledge held by one of ordinary skill in the art. Tamura is silent as to what type of lens is used in the imaging assembly for collimation. The different types of lenses enumerated in claims 14-17 and 40 are all recognized as equivalent means in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use any one of the well-known lenses for collimation in the device disclosed by Tamura.

With regards to claim 8, Tamura does not expressly state (in the abstract) or show that the fiber array extends over the cutout portion. However, the reference shows that the waveguide (fiber) extends into the cutout portion (drawing 1c). Because the reference shows the possibility that the fiber may extend over the cutout portion, this limitation would have been obvious to one of ordinary skill in the art at the time of invention.

Claims 4, 5, and 24-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura in view of Shibuya U.S. Patent No. 6,340,251 (newly cited). Refer to the appropriate drawings or parts of the specification. Tamura as applied above, discloses an optical assembly with a majority of the claimed limitations, including those of claims 25, 28, 29, and 31. As to claims 26, 27, 32, and 34, Tamura's disclosure shows that the optical array is mounted on the upper surface covering the notch. However, Tamura does not explicitly state that the device can be used with an integrated chip.

On the other hand, the use of integrated optic chips is well known in the art. In most applications involving optical waveguides, the optical signals are converted to electrical signals using an integrated optical chip having both waveguides and optoelectronic components. Shibuya discloses a multichannel-coupling module that teaches the limitation that Tamura does not explicitly show. Specifically, Shibuya teaches that it is advantageous to be able to couple the imaging array (12) to an integrated optic chip (11), as mentioned in claim 4. With reference to claims 5, 24, 30, and 33, it is well known in the art that optoelectronic chips have an active element and some waveguide that guides the optical signal to or from the active element. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use an integrated optoelectronic chip with waveguides.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Amano U.S. Patent No. 6,222,967 discloses a packaging and optical module including a cut-out in the upper surface of the substrate.

Applicant's arguments with respect to claims 1-39 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2874

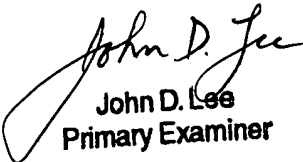
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel E Valencia whose telephone number is (703)-305-4399. The examiner can normally be reached on Monday-Friday 9:30-6:00.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0956.



DEV



John D. Lee
Primary Examiner